AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A direct current to direct current voltage converter (DC-DC converter) comprising:

a transformer coupled with a voltage source;

a self-starting oscillator that includes:

a secondary winding of the transformer;

a capacitor;

a first switch coupled to conduct current from the DC source via a primary winding of the transformer, the first switch being a normally closed switch; and

a second switch coupled to conduct current in parallel path with the first switch, the second switch being a normally open switch having a lower saturation resistance than the first switch, wherein the second switch operates once the DC-DC converter has begun oscillating.

2. (Original) The DC-DC converter of claim 1, wherein the transformer has a secondary turns to primary turns ratio of approximately thirty to one (30:1).

3. (Original) The DC-DC converter of claim 1, wherein the first switch is one of a junction field effect transistor and a depletion mode metal-oxide semiconductor field effect transistor.

4. (Original) The DC-DC converter of claim 1, wherein the second switch is an enhancement mode metal-oxide semiconductor field effect transistor.

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5. (Original) The DC-DC converter of claim 1, further comprising:

a programmable control circuit coupled with the first and second switches, wherein the control circuit effects opening and closing of the first and second switch based, at least in part, on a stepped up voltage potential generated by the DC-DC converter.

6. (Original) A direct current to direct current voltage converter (DC-DC converter) comprising:

a transformer having a primary and a secondary winding;

a resistive-capacitive circuit coupled with the secondary winding;

a first switch having a control terminal coupled with the resistive capacitive circuit, the first switch being further coupled with the primary winding and a ground terminal, the first switch comprising a normally closed switch; and

a second switch having a control terminal coupled so as to control the generation of a stepped-up voltage based, at least in part, on an output voltage of the DC-DC converter, the second switch being further coupled with the primary winding and the ground terminal so as to conduct current in a parallel path with the first switch.

7. (Original) The DC-DC converter of claim 6, further comprising a control circuit coupled with the control terminal of the first switch, the control terminal of the second switch and an output voltage terminal of the DC-DC converter, wherein the control circuit controls the operation of the first and second switches based, at least in part, on the output voltage of the DC-DC converter.

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8. (Original) The DC-DC converter of claim 7, wherein the control circuit comprises:

a programmable controller coupled with the output voltage terminal and the second switch; and

a charge pump circuit coupled with the programmable controller and the first switch.

9. (Original) The DC-DC converter of claim 6, wherein the primary and secondary windings of the transformer each comprise a positive terminal and a negative terminal;

wherein respective first conduction terminals of the first and second switches are coupled with the negative terminal of the primary winding; and

respective second conduction terminals of the first and second switches are coupled with the ground terminal.

10. (Original) The DC-DC converter of claim 9, wherein the positive terminal of the secondary winding is coupled with the control terminal of the second switch and the resistive capacitive circuit.

11. (Original) The DC-DC converter of claim 9, wherein the positive terminal of the primary winding is coupled with the negative terminal of the secondary winding.

12. (Original) The DC-DC converter of claim 6, wherein a turns ratio of turns of the primary winding to turns of the secondary winding is approximately one to thirty (1:30).

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13. (Original) The DC-DC-converter of claim 12, wherein the primary winding comprises eight turns and the secondary winding comprises two hundred forty turns.

14. (Original) The DC-DC converter of claim 6, wherein the first switch comprises one of an n-type junction field effect transistor and a depletion mode metal-oxide semiconductor field effect transistor (MOSFET); and

the second switch comprises an n-type enhancement mode complimentary MOSFET.

15. (Original) The DC-DC converter of claim 6, further comprising a rectifying device coupled with the secondary winding and a charge storage device for storing a stepped up voltage, the charge storage device being coupled with the rectifying device.

16. (Original) The DC-DC converter of claim 15, wherein the rectifying device comprises a diode; and

the charge storage device comprises a capacitor coupled with, and between, the diode and the ground terminal.

17. (Original) A direct current to direct current voltage converter (DC-DC converter) comprising:

a transformer having a primary and a secondary winding;

a resistive-capacitive circuit coupled with the secondary winding of the transformer;

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a first switch having a control terminal coupled with the resistive capacitive circuit, the first switch being further coupled with the primary winding and a ground terminal, the first switch comprising a normally closed switch; and

a second switch having a control terminal coupled with the secondary winding, the second switch being further coupled with the primary winding and the ground terminal, the second switch comprising a normally open switch that is coupled so as to conduct current in a parallel path with the first switch.

18. (Original) The DC-DC converter of claim 17, wherein the primary and secondary windings of the transformer each comprise a positive terminal and a negative terminal, the positive terminal of the primary winding being coupled with the negative terminal of the secondary winding..

19. (Original) The DC-DC converter of claim 18, wherein the primary and secondary windings of the transformer each comprise a positive terminal and a negative terminal;

wherein respective first conduction terminals of the first and second switches are coupled with the negative terminal of the primary winding; and

respective second conduction terminals of the first and second switches are coupled with the ground terminal.

20. (Original) The DC-DC converter of claim 18, wherein the control terminal of the second switch is coupled with the positive terminal of the secondary winding.

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21. (Original) The DC-DC converter of claim 17, further comprising a rectifying device coupled with the secondary winding and a charge storage device for storing a stepped up voltage, the charge storage device being coupled with the rectifying device and the ground terminal.

22. (Original) The DC-DC converter of claim 21, wherein the rectifying device comprises a diode; and

the charge storage device comprises a capacitor.

23. (Original) The DC-DC converter of claim 17, wherein the first switch comprises one of an n-type junction field effect transistor and a depletion mode metal-oxide semiconductor field effect transistor.

24. (Original) The DC-DC converter of claim 17, wherein the second switch comprises an n-type enhancement mode complimentary metal-oxide semiconductor field effect transistor.

25. (Original) A direct current to direct current voltage converter (DC-DC converter) comprising:

a transformer having a primary and a secondary winding;

a resistive-capacitive circuit coupled with the secondary winding;

a first switch having a control terminal coupled with the resistive capacitive circuit, the first switch being further coupled with the primary winding and a ground terminal, the first switch comprising a normally closed switch; and

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a second switch having a control terminal coupled with a control circuit that controls the DC-DC converter based, at least in part, on an output voltage of the DC-DC converter to produce a stepped-up voltage on an output voltage terminal of the DC-DC converter, the second switch being further coupled with the primary winding and the ground terminal so as to conduct current in a parallel path with the first switch.

26. (Original) The DC-DC converter of claim 25, wherein the control circuit comprises:

a programmable controller coupled with the output voltage terminal and the second switch; and

a charge pump circuit coupled with the programmable controller and the first switch.

27. (Original) The DC-DC converter of claim 25, wherein the primary and secondary windings of the transformer each comprise a positive terminal and a negative terminal;

wherein respective first conduction terminals of the first and second switches are coupled with the negative terminal of the primary winding; and respective second conduction terminals of the first and second switches are coupled with the ground terminal.

28. (Original) The DC-DC converter of claim 25, further comprising a rectifying device coupled with the secondary winding and a charge storage device for storing a stepped up voltage, the charge storage device being coupled with, and between, the rectifying device and the ground terminal.

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29. (Original) The DC-DC converter of claim 28, wherein the rectifying device comprises a diode; and

the charge storage device comprises a capacitor.

30. (Original) The DC-DC converter of claim 25, wherein the first switch comprises one of an n-type junction field effect transistor and a depletion mode metal-oxide semiconductor field effect transistor.

31. (Original) The DC-DC converter of claim 25, wherein the second switch comprises an n-type enhancement mode complimentary metal-oxide semiconductor field effect transistor.

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